

Stam et al.

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What is claimed is: w/priority to provisional 60/436,442

Assigned to Syngenta Biotech Ltd 23 December 2002
in Research Triangle Park, NC

1. A method for identifying a compound that inhibits the activity of a protein essential for *Drosophila* viability, comprising:
- (a) expressing in a recombinant host a DNA molecule comprising
- (i) a nucleotide sequence selected from the group consisting of the odd numbered SEQ ID NOs:1-49, or
- (ii) a nucleotide sequence encoding an amino acid sequence selected from the group consisting of the even numbered SEQ ID NOs:2-50,
- to produce a protein essential for *Drosophila* viability;
- (b) testing compounds suspected of having the ability to inhibit the activity of the protein expressed in (a); and
- (c) identifying a compound tested in (b) that inhibits the activity of the protein.
2. A method for killing or inhibiting the growth or viability of an insect, comprising applying to the insect a compound identified according to the method of claim 1.
3. A method for identifying a compound that interacts with a protein essential for *Drosophila* viability, comprising:
- (a) expressing in a recombinant host a DNA molecule comprising
- (i) a nucleotide sequence selected from the group consisting of the odd numbered SEQ ID NOs:1-49, or
- (ii) a nucleotide sequence encoding an amino acid sequence selected from the group consisting of the even numbered SEQ ID NOs:2-50,
- to produce a protein essential for *Drosophila* viability;
- (b) testing compounds suspected of having the ability to interact with the protein expressed in (a); and
- (c) identifying a compound tested in (b) that interacts with the protein.

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4. A method for killing or inhibiting the growth or viability of an insect, comprising applying to the insect a compound identified according to the method of claim 3.

5. A method for killing or inhibiting the growth or viability of an insect, comprising inhibiting expression in said insect of a protein having at least 60% sequence identity to an amino acid sequence selected from the group consisting of the even numbered SEQ ID NOs:2-50.

6. The method of claim 5, wherein expression of said protein is inhibited by disruption in said insect of a nucleotide sequence having at least 60% sequence identity to a nucleotide sequence selected from the group consisting of the odd numbered SEQ ID NOs:1-49.

7. The method of claim 6, wherein said nucleotide sequence is disrupted by RNA interference.